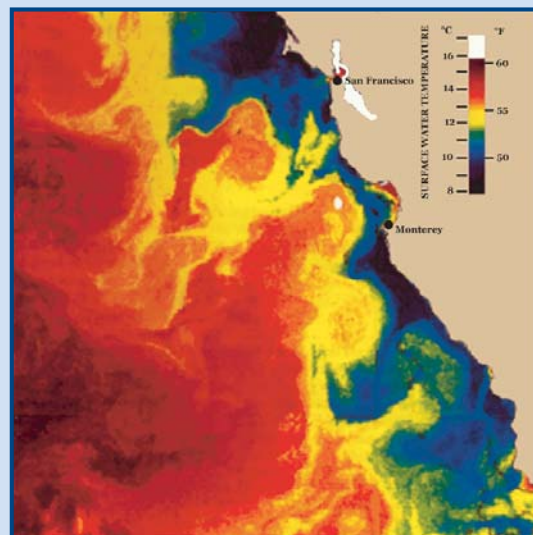


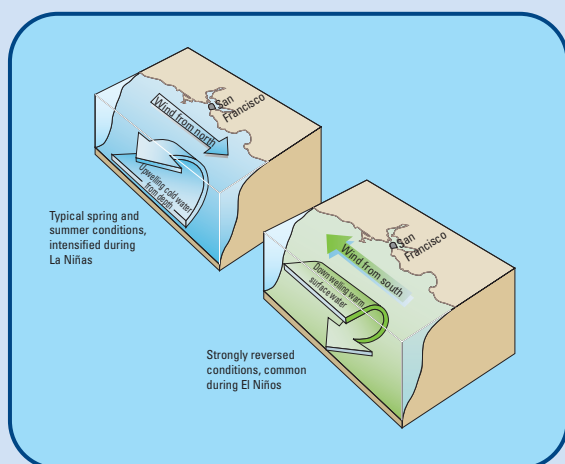
# Oceanography Beyond the Golden Gate

## 1989 – 2003

The USGS measured ocean currents and temperatures off Central California as part of an international group of Federal, State, Academic, and private institutions. The project was part of a larger study that took nearly 14 years to finish. This group also studied geology, biology, and environmental issues in the Gulf of the Farallones using the most modern instruments and procedures available.



Sea surface water temperature in June, 1989



Scientists will use detailed data about the ocean currents and temperatures to better understand coastal weather, beach erosion, fisheries, general ecology, and the effects of El Niño cycles on Central California.

### Water movement and winds off the Central California Coast



Location Map

Dr. Marlene Noble of the USGS Western Region Coastal and Marine Geology Team coordinated the sea current and temperature project.



Instruments used to measure currents and water clarity are lowered into the Gulf of the Farallones

More information on the web: <http://walrus.wr.usgs.gov/posters>